IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

PARUS HOLDINGS INC., Plaintiff, v. APPLE INC., Defendant.	Case No.: 6:21-cv-00968 JURY TRIAL DEMANDED

PARUS HOLDING INC.'S
COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Parus Holdings Inc. ("Parus" or "Plaintiff") for its Complaint for Patent infringement ("Complaint") against Apple Inc. ("Apple" or "Defendant"), hereby alleges as follows:

THE PARTIES

1. Plaintiff Parus Holdings Inc. is Delaware corporation having its principal place of business at 3000 Lakeside Drive, Suite 110S, Bannockburn, IL 60015.

2. Parus is the owner by assignment of U.S. Patent No. 6,721,705 ("the '705 Patent") (attached as Exhibit 1) and U.S. Patent No. 8,185,402 ("the '402 Patent") (attached as Exhibit 2).

3. Defendant Apple Inc. is a California corporation with a principal place of business at One Apple Park Way, Cupertino, California 95014.

4. Apple is registered to do business in Texas.

5. Apple has regular and established places of business in this District, including, at 3121 Palm Way, Austin, Texas, 2901 S. Capital of Texas Hwy., Austin, TX, and 12535 Riata

Vista Circle, Austin, Texas, and 5501 West Parmer Lane, Austin, Texas. Apple employs thousands of people, including hundreds of engineers, who work at these locations in Texas. The work done at these Apple locations in Texas includes work related to Apple's iPhones, iPads, iPods and Mac products.

6. Apple also operates brick-and-mortar Apple Stores at Barton Creek Square, Austin, Texas and at Apple Domain Northside, Austin, Texas. Apple uses, offers for sale and sells Apple's iPhones, iPads, iPods and Mac products that include Siri functionality at these Apple Stores.

7. On information and belief, Apple can be served through its registered agent, CT Corporation System, 818 W. Seventh Street, Suite 930, Los Angeles, California, 90017.

8. Apple has placed or contributed to placing infringing products like the iPhone 12 into the stream of commerce via an established distribution channel knowing or understanding that such products would be sold and used in the United States, including in the Western District of Texas. On information and belief, Apple also has derived substantial revenues from infringing acts in the Western District of Texas, including from the sale and use of infringing products like the iPhone 12.

9. Defendant had constructive notice of the '705 Patent based on Parus's marking at least as of 9/17/2015.

10. Defendant had constructive notice of the '402 Patent based on Parus's marking at least as of 9/17/2015.

JURISDICTION AND VENUE

11. This is an action for patent infringement arising under the patent laws of the United States, Title 35 of the United States Code. Accordingly, this Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

12. This Court has specific personal jurisdiction over Defendant at least in part because Defendant conducts business in this Judicial District. Parus's causes of action arise, at least in part, from Defendant's contacts with and activities in the State of Texas and this Judicial District. Upon information and belief, each Defendant has committed acts of infringement within the State of Texas and this Judicial District by, *inter alia*, directly and/or indirectly using, selling, offering to sell, or importing products that infringe one or more claims of the '705 Patent and/or the '402 Patent.

13. Defendant has committed acts within this District giving rise to this action, and has established sufficient minimum contacts with the State of Texas such that the exercise of jurisdiction would not offend traditional notions of fair play and substantial justice.

14. Venue is proper in this Judicial District pursuant to 28 U.S.C. § 1391(b), (c), and 1400(b) because (1) Defendant has a regular and established place of business in this Judicial District, and (2) Defendant has committed and continues to commit acts of patent infringement in this Judicial District by, *inter alia*, directly and/or indirectly using, selling, offering to sell, or importing products that infringe one or more claims of the '705 Patent and/or the '402 Patent.

PATENTS-IN-SUIT

15. Parus is the owner, by assignment, of the '705 Patent, titled "Robust voice browser system and voice activated device controller." A true and correct copy of the '705 Patent granted by the U.S. Patent & Trademark Office is attached as Exhibit 1.

16. Parus is the owner, by assignment, of the '402 Patent, which is also titled "Robust voice browser system and voice activated device controller." A true and correct copy of the '402 Patent granted by the U.S. Patent & Trademark Office is attached as Exhibit 2.

17. The '705 and '402 patents both relate to "robust and highly reliable" systems for users to search the internet using voice-enabled devices. '402 Patent at 1:15–18.[1] At the time of the invention, only a few types of devices were available for searching web sites (*i.e.*, conventional computers, PDAs, or web-phones/web-pagers). As explained in the specification, these devices had numerous limitations, including (i) the form of the devices, their locations, and their ability to connect to the Internet; (ii) the limited compatibility of the devices with particular web site designs; and (iii) the devices' limited responsiveness to rapid changes in website content (e.g., "[t]he design of the web site may change, the information required by the web site in order to perform searches may change, and the method of reporting search results may change"). *Id*. at 2:25–36. Therefore, there was a need for a system that could "detect modifications to web sites and adapt to such changes in order to quickly and accurately provide the information requested by a user through a voice enabled device." *Id*. at 2:32–36.

18. Voice-enabled searches of the Internet present several unique technological hurdles. For example, unlike regular browser-based or application-based searches, a voice-enabled device must limit its results because a user simply cannot listen to an entire page worth of search results. *See id.* at 2:37–52. Voice users are especially sensitive to latency and expect immediate responses to their search requests. *Id.* at 2:40-42. Indeed, rapid responses are an essential feature of a voice system's desirability and usability. *Id*. at 2:44–47. And "[a] system that introduces too much delay between the time a user makes a request and the time of response will not be tolerated by users and will lose its usefulness." *Id*.

19. The inventors of the '705 and '402 patents were thus presented with a technical problem: how to quickly provide complete, timely, and relevant web site search results to voice-

[1] The '705 and '402 patents share a common specification.

enabled devices, accounting for the rapidly changing nature of web sites and Internet applications. *Id.* at 1:61-2:11, 2:20–52.

20. To address this need in the art, the inventors of the Patents-in-Suit developed specific and concrete ways of solving the technical problems presented by voice-based internet searching: systems and methods for sequentially accessing web sites based on a ranked order and periodically polling web sites on the Internet. The Patents-in-Suit are directed to a "robust" system to provide quick, reliable results to the voice-based user that can access web sites in a ranked order in response to a voice request and "on its own" discover new web sites by searching for new sources on the Internet. *See, e.g.,* '705 Patent at 2:64-3:4; 3:9-12; 3:17-22.

21. When viewed as a whole, the claims of the '705 and '402 patents contain elements, including when viewed as an ordered combination, that are unconventional and were not routine or not merely a recitation of well-understood technologies or components at the time of the invention. This fact is underscored by the specification's clear explanation of the state of the art and of the need for the inventors' technological improvement to voice-based internet searching. The claims recite a specific, discrete implementation of a method and system for voice-enabled searching of web sites. The claimed inventions were not well-known, routine, or conventional technologies or components at the time of the invention and represent specific improvements over the prior art and existing systems and methods. The claimed technology was not known in the prior art at the time of the invention, let alone well-known, routine, or conventional.

22. Each of the '705 and '402 patents have separate claims. Claims are defined by their language, and the claims of each Patent-in-Suit vary in scope. For example, claims 1 and 2 of the '705 Patent relate to an internet browsing system and method, while claims 3 and 4 of the

'705 Patent relate to a system and method for controlling household devices. Likewise, claim 6 of the '402 Patent requires the method to periodically poll each web site. No one claim is representative of every claim in either patent. Although each claim recites a series of elements that, when taken in combination are not conventional, well-understood, or routine, because the elements of each claim are vary, the analysis of conventionality will vary as well.

COUNT I

APPLE'S INFRINGEMENT OF U.S. PATENT NO. 6,721,705

23. Parus restates and incorporates by reference all of the allegations made in the preceding paragraphs as though fully set forth herein.

24. Parus is the owner, by assignment, of the '705 Patent. A true copy of the '705 Patent granted by the U.S. Patent & Trademark Office is attached as Exhibit 1.

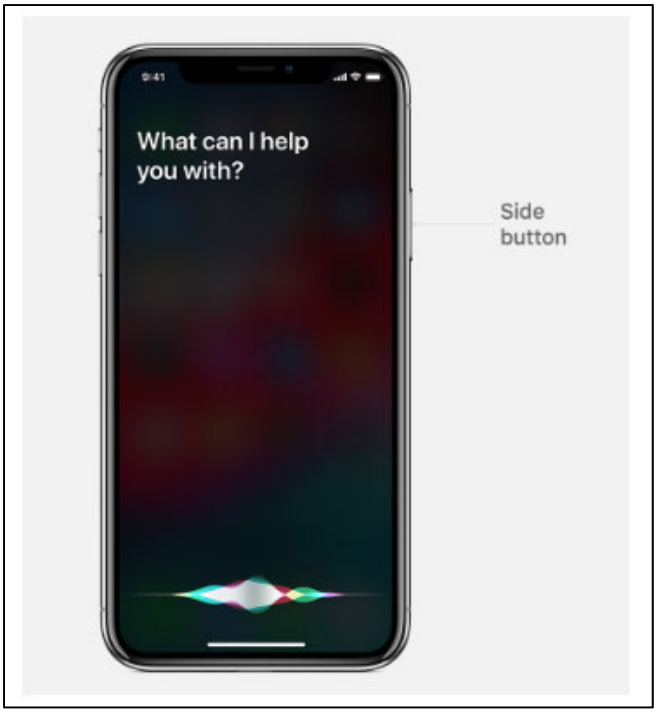
25. Defendant Apple has directly infringed, and is continuing to directly infringe, literally or under the doctrine of equivalents, at least independent claim 2 of Parus's '705 Patent by making, using, selling, and/or offering for sale its Apple devices with Siri in the United States, in violation of 35 U.S.C. § 271(a).

26. At least as of the filing of this complaint, Defendant Apple has knowledge of the '705 Patent.

27. Various products with Siri made or sold by Apple directly infringe at least independent claim 2 of the '705 Patent. Those Apple products include at least the Apple iPhone 6s or later models, iPad Pro 12.9 inch (3rd Generation), iPad Pro 11-inch, iPad Pro 12.9-inch (2nd Generation), iPad Pro 10.5 inch, iPad Pro 9.7 inch, iPad (6th Generation), all Apple iWatches, all HomePods, CarPlay, MacBook Pro (15 inch, 2018), MacBook Pro (13-inch, 2018, Four

Thunderbolt 3 Ports), MacBook Air (Retina, 13-inch, 2018), and iMac Pro. (Apple Accused Products). *See e.g.*, https://support.apple.com/en-us/HT209014.

28. Each of the Apple Accused Products in conjunction with Siri perform a method for using voice commands to browse Internet web sites as required by claim 2 of the '705 Patent. As a way of illustration, the Apple iPhone X with Siri is a voice enabled device that allows users to utter speech commands into a voice enabled device and provide users with retrieved information from pre-selected web sites in an audio form via said voice enabled device:



See e.g., https://support.apple.com/en-us/HT204389. Based on information and belief, those preselected websites are provided in a database as required by claim 2 of the '705 Patent.

29. Siri allows the user to communicate with the iPhone X using voice recognition and speech synthesis.

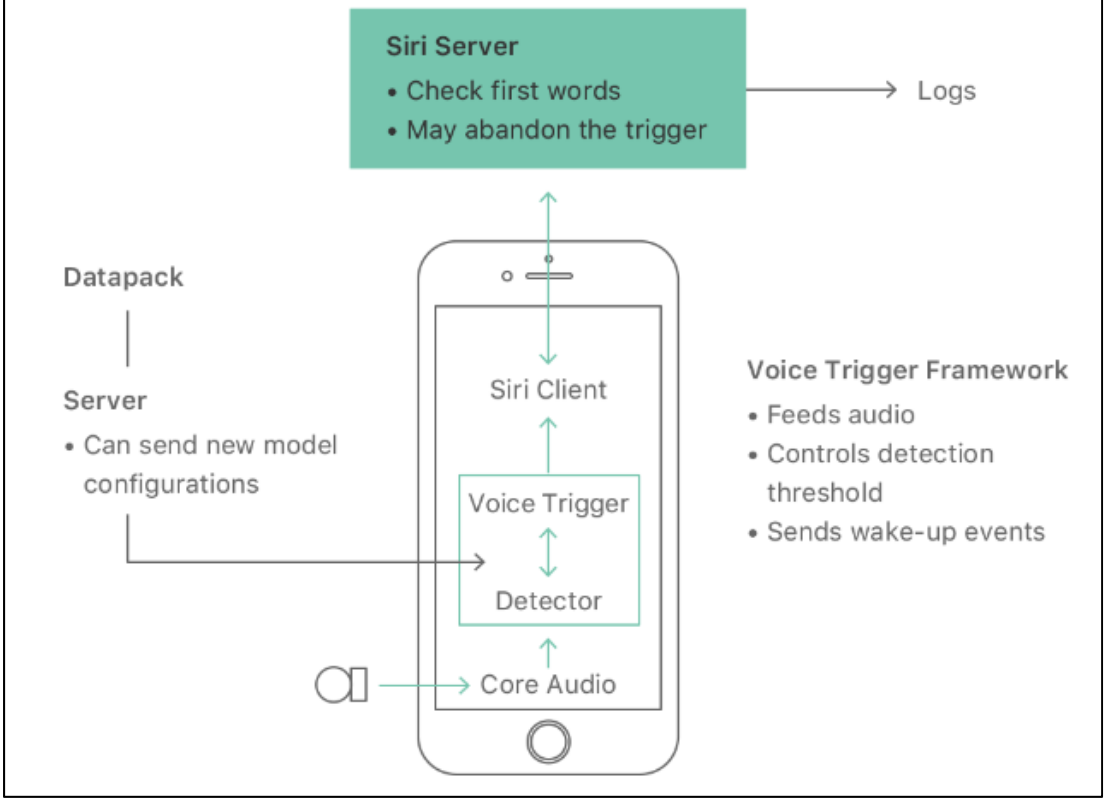
Siri is a personal assistant that communicates using speech synthesis. Starting in iOS 10 and continuing with new features in iOS 11, we base Siri voices on deep learning. The resulting voices are more natural, smoother, and allow Siri's personality to shine through. This article presents more details about the deep learning based technology behind Siri's voice.

See e.g., https://machinelearning.apple.com/2017/08/06/siri-voices.html.

Hands-Free Access to Siri

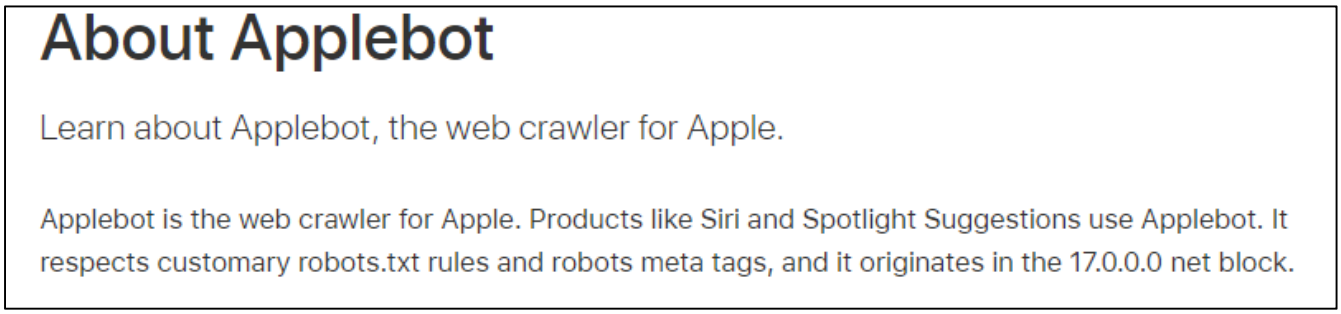
To get Siri's help, say "Hey Siri". No need to press a button as "Hey Siri" makes Siri hands-free. It seems simple, but quite a lot goes on behind the scenes to wake up Siri quickly and efficiently. Hardware, software, and Internet services work seamlessly together to provide a great experience.

Figure 1. The Hey Siri flow on iPhone



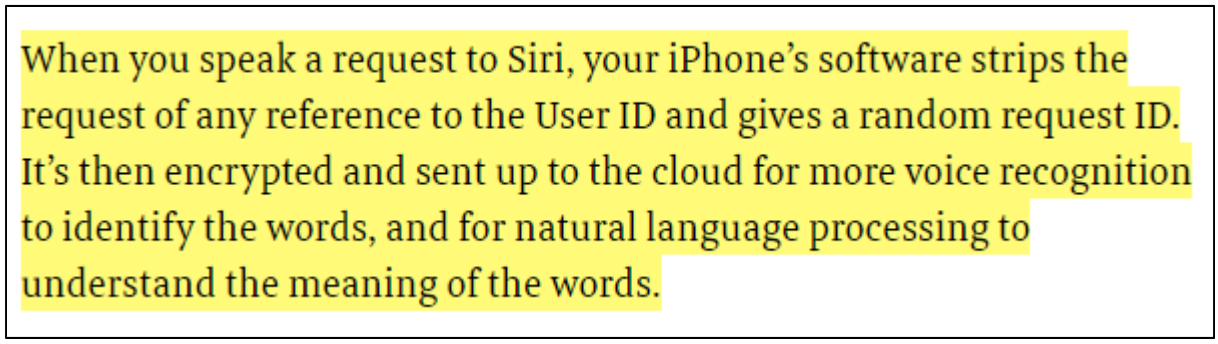
See e.g., https://machinelearning.apple.com/2017/10/01/hey-siri.html.

30. The Apple iPhone X in conjunction with Siri acquires information from and/or via one or more sources providing a database storing a list of websites on disk or in memory and assigning a rank number to each of the web sites and storing the rank number in the database. For example, the Apple iPhone X in conjunction with Siri uses a list of web sites that have been already crawled to obtain information.



See e.g., https://support.apple.com/en-us/HT204683.

31. Further, the Apple iPhone X uses the cloud to receive a voice command from a user and converting the command into a digital data message by performing natural language processing to understand the user's spoken commands and convert the command into a digital data message.



See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

32. The Apple Accused Products in conjunction with Siri includes a CPU based web browsing system for receiving the digital data message and accessing one of the web sites having the highest rank number. For example, the Apple iPhone X includes a CPU that identifies the information to be retrieved. Because the Apple iPhone X in conjunction with Siri can handle voice commands on the device itself or with collaboration with the cloud, there is a CPU-based web browsing system for receiving the digital data message and accessing one of the web sites having the highest ranking as required by claim 2 of the '705 Patent.

> **AI ON THE DEVICE**
>
> Like its rivals, Apple carries out a lot of fancy processing and machine learning tasks on data the user speaks or types. The majority of it–especially tasks that involve very personal information–happens on the device, locked away from the view of Apple or anyone else but the user.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

> When you speak a request to Siri, your iPhone's software strips the request of any reference to the User ID and gives a random request ID. It's then encrypted and sent up to the cloud for more voice recognition to identify the words, and for natural language processing to understand the meaning of the words.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy

33. The Apple Accused Products in conjunction with Siri provide a database storing a list of web sites on a disk or memory. For example, the Apple iPhone X includes a plurality of

pre-selected web site addresses, and each pre-selected web site address identifying a web site where the information may be retrieved. These websites have previously been crawled and pre-selected by Applebot:

Rumors that Apple might be creating its own search engine started doing the rounds last fall, when webmasters started seeing web crawler visits from IP addresses starting with 17 – the IP address block owned entirely by Apple. Apple has now officially confirmed in a support document that it is operating its own web crawler called Applebot.

> *Applebot is the web crawler for Apple, used by products including Siri and Spotlight Suggestions. It respects customary robots.txt rules and robots meta tags. It originates in the 17.0.0.0 net block.*

See e.g., https://9to5mac.com/2015/05/06/apple-search-engine-applebot/.

About Applebot

Learn about Applebot, the web crawler for Apple.

Applebot is the web crawler for Apple. Products like Siri and Spotlight Suggestions use Applebot. It respects customary robots.txt rules and robots meta tags, and it originates in the 17.0.0.0 net block.

See e.g., https://support.apple.com/en-us/HT204683.

34. Further, the Apple iPhone X in conjunction with Siri uses Google and Bing to assist with providing a plurality of pre-selected web site addresses, each said web site address identifying a web site containing said information to be retrieved. Those web sites are identified in a ranked order in the database.

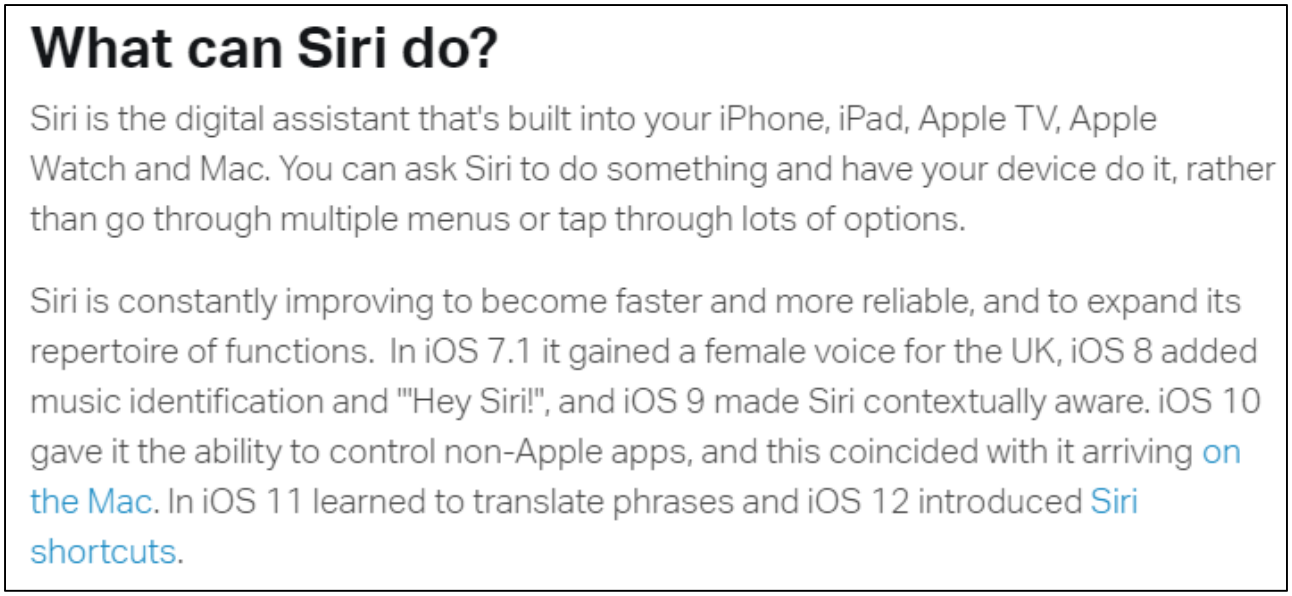
> The big winner in Apple's recent switch to Google for search may be Siri. Last week Apple confirmed that its personal assistant will still use Microsoft's Bing for its image searches, but that Google will provide the web search, and YouTube will provide the video search. Apple will also use Google for searches in iOS, and in Spotlight in macOS.

See e.g., https://www.fastcompany.com/40475434/siri-may-be-the-big-winner-in-apples-switch-to-google-for-web-search.

> "Google is much better at extracting information from web content and presenting it to the user in a list format, which is created on a query by query basis," says Scott Zimmerman, technical SEO analyst at Walker Sands. "The quality of results, especially as it relates to long-tail queries that are typical for voice search, are significantly better on Google."

See e.g., https://www.fastcompany.com/40475434/siri-may-be-the-big-winner-in-apples-switch-to-google-for-web-search.

35. The Apple iPhone X in conjunction with Siri is a voice-enabled device that includes a CPU-based web browsing system for receiving the digital data message and accessing one of the web sites having the highest rank number, the web browsing system including at least a content extraction agent, a content fetcher, a polling and ranking agent and a content file. The system provides information retrieved from the web sites to the user in an audio form via the voice-enabled device.



What can Siri do?

Siri is the digital assistant that's built into your iPhone, iPad, Apple TV, Apple Watch and Mac. You can ask Siri to do something and have your device do it, rather than go through multiple menus or tap through lots of options.

Siri is constantly improving to become faster and more reliable, and to expand its repertoire of functions. In iOS 7.1 it gained a female voice for the UK, iOS 8 added music identification and "'Hey Siri!", and iOS 9 made Siri contextually aware. iOS 10 gave it the ability to control non-Apple apps, and this coincided with it arriving on the Mac. In iOS 11 learned to translate phrases and iOS 12 introduced Siri shortcuts.

See e.g., https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/.

36. The Apple Products in conjunction with Siri include a computer, said computer operatively connected to the internet.

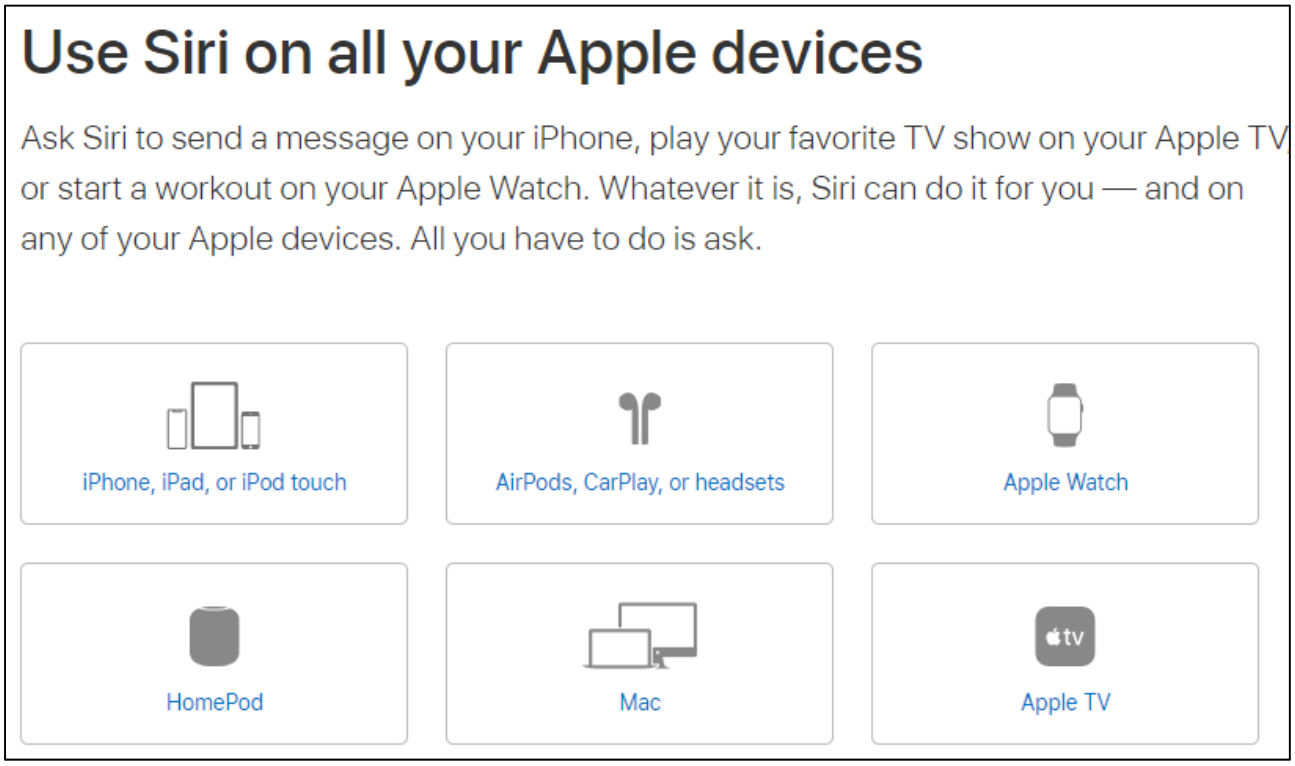
37. For example, the Apple iPhone X has a computer (i.e., microprocessor) in the A11 integrated circuit. https://support.apple.com/kb/sp770?locale=en_US. The A11 integrated circuit is operatively coupled to the internet. *Id.* As an additional example, and alternatively, the Apple iPhone X with built-in Siri has access to computing hardware that processes questions asked of Siri including 32 powerful HP servers with a total of 1024 cores and 32 terabytes of RAM a piece[2]. Specifically, each instance of Siri is made up of 4 HP c7k enclosures made up of 8 HP server blades each, with memory upgrades to 1TB of RAM. The company also says its text-to-speech can run on *"both general and* special purpose microprocessors, and any one or more processors of any kind of digital computer," indicating high sophistication and optimization.

[2] https://www.cultofmac.com/264381/hardware-siri-runs-puts-new-mac-pro-shame/.

> This information allegedly comes — albeit second-hand — from Apple's lead cloud architect, who says that every instance of Siri runs on 32 powerful HP servers with a total of 1024 cores and 32 terrabytes of RAM apiece. That certainly makes the new Mac Pro look long in the tooth.
>
> Specifically, each instance of Siri is made up of 4 HP c7k enclosures made up of 8 HP server blades each, with memory upgrades to 1TB of RAM.

See e.g., https://www.cultofmac.com/264381/hardware-siri-runs-puts-new-mac-pro-shame/.

38. Further, the computer is operatively connected to the internet and operatively connected to the cloud:



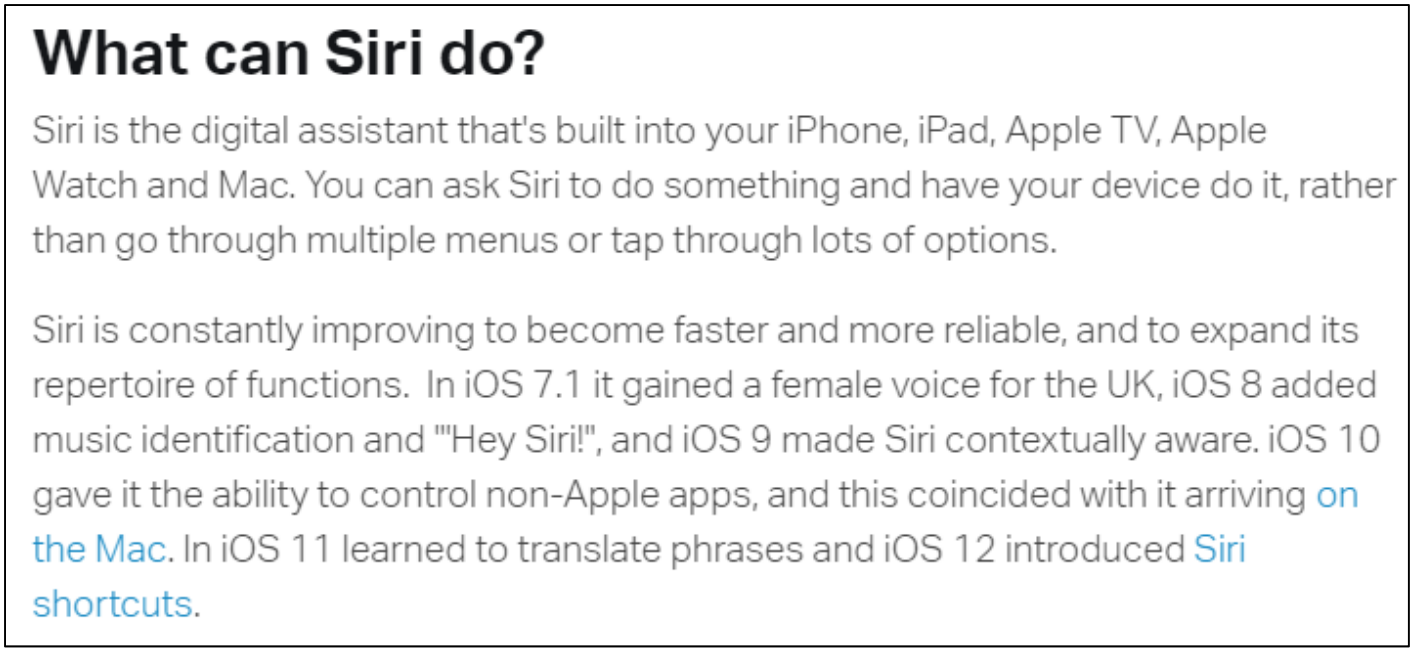
See e.g., https://support.apple.com/en-us/HT204389.

39. The Apple Accused Products in conjunction with Siri serve as a voice enabled device operatively connected to said computer, said voice enabled device configured to receive speech commands from users. For example, the Apple iPhone X with built-in Siri (controlled by AI models in the cloud) includes a voice enabled device operatively connected to the computing

hardware, the voice enabled device (the microphone on the Apple iPhone X and associated processing power) is configured to receive speech commands from users. *See e.g.*, https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/.

40. The Apple Accused Products in conjunction with Siri include at least one speaker-independent speech recognition device, said speaker-independent speech recognition device operatively connected to said computer and to said voice enabled device. For example, the Apple iPhone X with built-in Siri (controlled by AI models in the cloud) includes at least one speaker-independent speech recognition device, said speaker-independent speech recognition device operatively connected to the computing hardware and to the voice enabled Apple iPhone X. *See e.g.*, https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/.

41. The Apple Accused Products in conjunction with Siri receive web browsing system response data from the web site with the highest rank number and convert the response data into an audio message that is transmitted to the user. For example, the Apple iPhone X in conjunction with Siri is a system for retrieving information from web sites by uttering speech commands into a voice enabled device. Therefore, the speech commands comprise information requests selectable by the user.



What can Siri do?

Siri is the digital assistant that's built into your iPhone, iPad, Apple TV, Apple Watch and Mac. You can ask Siri to do something and have your device do it, rather than go through multiple menus or tap through lots of options.

Siri is constantly improving to become faster and more reliable, and to expand its repertoire of functions. In iOS 7.1 it gained a female voice for the UK, iOS 8 added music identification and "'Hey Siri!", and iOS 9 made Siri contextually aware. iOS 10 gave it the ability to control non-Apple apps, and this coincided with it arriving on the Mac. In iOS 11 learned to translate phrases and iOS 12 introduced Siri shortcuts.

See e.g., https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/.

42. The Apple Accused Products in conjunction with Siri include said computer further configured to access at least one of said plurality of web sites identified by said instruction set to obtain said information to be retrieved, aid computer configured to first access the web site with the highest rank number. For example, the Apple iPhone X with built-in Siri is a system for retrieving information from pre-selected web sites by uttering speech commands into a voice enabled device. Apple references Siri on its website as the virtual assistant that recognizes voice commands and executes the requested functions. Siri uses various sources for obtaining information, including search engines, websites, or apps on a device. *See e.g.*, https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/; https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

43. The Apple Accused Products in conjunction with Siri include at least one speech synthesis device, said speech synthesis device operatively connected to said computer and to said

voice enabled device for converting response data from a website into an audio message that is transmitted to a user. For example, the Apple iPhone X in conjunction with Siri can handle voice commands on the device itself or with help from the cloud. *See e.g.*, https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/.

44. Further, the Apple iPhone X in conjunction with Siri uses Applebot to crawl a plurality of web sites.

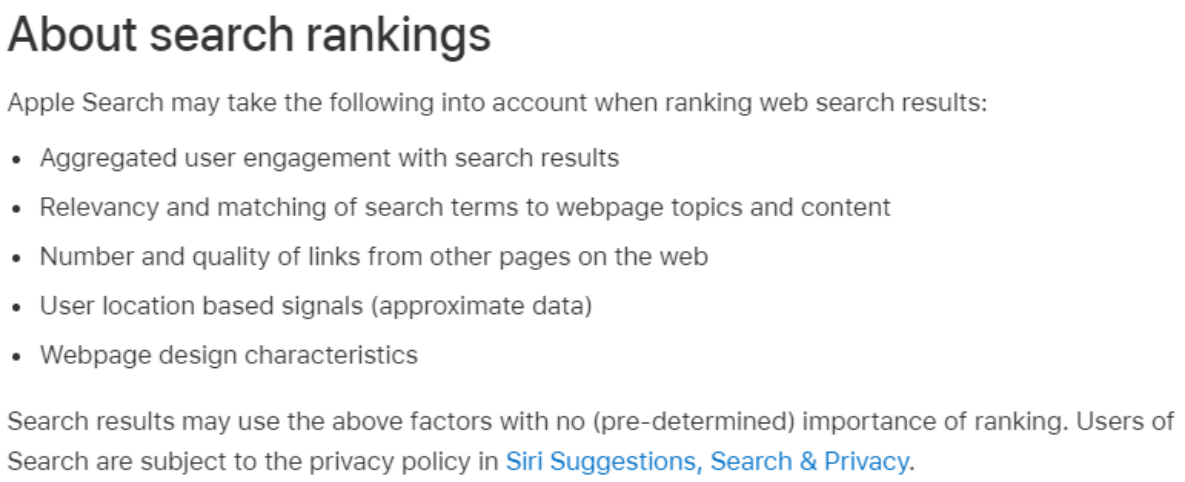
> Rumors that Apple might be creating its own search engine started doing the rounds last fall, when webmasters started seeing web crawler visits from IP addresses starting with 17 – the IP address block owned entirely by Apple. Apple has now officially confirmed in a support document that it is operating its own web crawler called Applebot.
>
> > *Applebot is the web crawler for Apple, used by products including Siri and Spotlight Suggestions. It respects customary robots.txt rules and robots meta tags. It originates in the 17.0.0.0 net block.*

See e.g., https://9to5mac.com/2015/05/06/apple-search-engine-applebot/.

> # About Applebot
>
> Learn about Applebot, the web crawler for Apple.
>
> Applebot is the web crawler for Apple. Products like Siri and Spotlight Suggestions use Applebot. It respects customary robots.txt rules and robots meta tags, and it originates in the 17.0.0.0 net block.

See e.g., https://support.apple.com/en-us/HT204683.

45. The Apple iPhone X in conjunction with Siri uses Applebot to crawl a plurality of web sites, periodically polls each of the web sites, decreases the rank number of the polled web site if no response is received, if an unexpected response is received, and if a response time of the polled web site is longer than a second response time of a second polled web site.



About search rankings

Apple Search may take the following into account when ranking web search results:

- Aggregated user engagement with search results
- Relevancy and matching of search terms to webpage topics and content
- Number and quality of links from other pages on the web
- User location based signals (approximate data)
- Webpage design characteristics

Search results may use the above factors with no (pre-determined) importance of ranking. Users of Search are subject to the privacy policy in Siri Suggestions, Search & Privacy.

See e.g., https://support.apple.com/en-us/HT204683.

46. In addition to Applebot, the Apple iPhone X in conjunction with Siri uses Google and Bing for searches as well. *See e.g.*, https://www.fastcompany.com/40475434/siri-may-be-the-big-winner-in-apples-switch-to-google-for-web-search. For example, the Google search engine uses a wide variety of polling mechanisms to determine the quality of a webpage and to change the rank of the site, including using polling digital data message and whether a response is received from a polled web site. *See, e.g.*, https://developers.google.com/search/docs/advanced/guidelines/cloaking; https://stackoverflow.com/questions/1878364/how-does-google-know-you-are-cloaking; https://www.google.com/search/howsearchworks/algorithms/ (Quality of content); https://developers.google.com/search/docs/advanced/guidelines/webmaster-guidelines. Further, Microsoft's Bing uses a wide variety of polling mechanisms to determine the quality of a webpage and to change the rank of the site, including using polling digital data message and whether a response is received from a polled web site. *See, e.g.*, https://www.bing.com/webmasters/help/webmaster-guidelines-30fba23a.

47. The Apple Accused Products in conjunction with Siri include said speech synthesis device configured to produce an audio message containing any retrieved information from said pre-selected web sites; and said speech synthesis device further configured to transmit said audio message to said users via said voice enabled device. For example, the Apple iPhone X includes the speech synthesis device configured to produce an audio message containing any retrieved information from the pre-selected web sites, and the speech synthesis device further configured to transmit said audio message to said users via said voice enabled device. Because the Apple iPhone X in conjunction with Siri can handle voice commands on the device itself or in collaboration with the cloud, there is a recognition grammar corresponding to each instruction set and corresponding speech command. *See e.g.*, https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/; https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

48. Defendant Apple has also infringed, and continues to infringe, claims of the '705 Patent by offering to commercially distribute, commercially distributing, selling, making and/or importing the Apple Accused Products, which are used in practicing the process, or using the systems, of the '705 Patent, and constitute a material part of the invention.

COUNT II

APPLE'S INFRINGEMENT OF U.S. PATENT NO. 8,185,402

49. Parus restates and incorporates by reference all of the allegations made in the preceding paragraphs as though fully set forth herein.

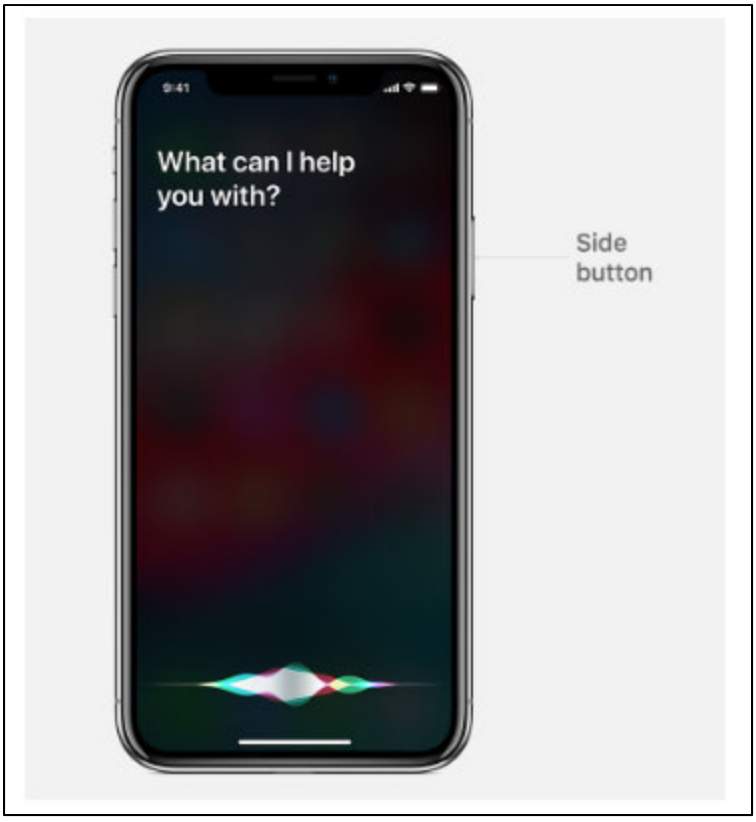
50. Parus is the owner, by assignment, of the '402 Patent. A true copy of the '402 Patent granted by the U.S. Patent & Trademark Office is attached as Exhibit 2.

51. Defendant Apple has directly infringed, and is continuing to directly infringe, literally or under the doctrine of equivalents, at least independent claim 1 of Parus's '402 Patent by making, using, selling, and/or offering for sale its Apple devices with Siri in the United States, in violation of 35 U.S.C. § 271(a).

52. At least as of the filing of the original complaint, Defendant Apple has knowledge of the '402 Patent.

53. Various products with Siri made or sold by Apple directly infringe at least independent claim 1 of the '402 Patent. Those Apple products include at least the Apple iPhone X or later models, the Apple iPhone 6s or later models, iPad Pro 12.9 inch (3rd Generation), iPad Pro 11-inch, iPad Pro 12.9-inch (2nd Generation), iPad Pro 10.5 inch, iPad Pro 9.7 inch, iPad (6th Generation), all Apple iWatches, all HomePods, CarPlay, MacBook Pro (15 inch, 2018), MacBook Pro (13-inch, 2018, Four Thunderbolt 3 Ports), MacBook Air (Retina, 13-inch, 2018), and iMac Pro. (Apple Accused Products). *See e.g.*, https://support.apple.com/en-us/HT209014.

54. The Apple Accused Products in conjunction with Siri perform a method for retrieving information from web sites by uttering speech commands into a voice enabled device and for providing to users retrieved information in an audible form via said voice enabled device. For example, the Apple iPhone X in conjunction with Siri is a voice enabled device:



See e.g., https://support.apple.com/en-us/HT204389; *see also*, https://machinelearning.apple.com/2017/08/06/siri-voices.html; https://machinelearning.apple.com/2017/10/01/hey-siri.html.

55. The Apple Accused Products in conjunction with Siri includes at least one computing device, the computing device operatively coupled to one or more networks. For example, the Apple iPhone X has a computer (i.e., microprocessor) in the A11 integrated circuit. https://support.apple.com/kb/sp770?locale=en_US. The A11 integrated circuit is operatively coupled to the internet. *Id.*

56. As an additional example, and alternatively, the Apple iPhone X with built-in Siri has access to computing hardware that processes questions asked of Siri including 32 powerful

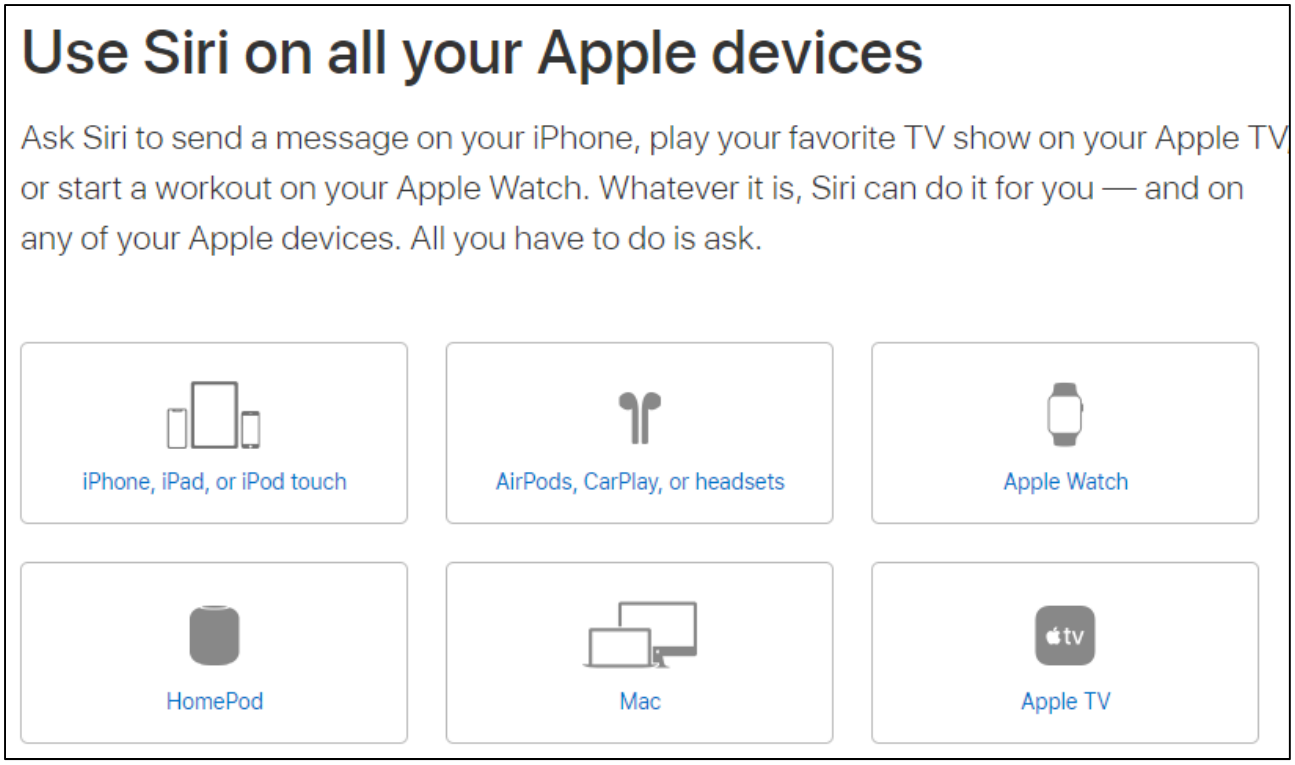
HP servers with a total of 1024 cores and 32 terabytes of RAM a piece[3]. Specifically, each instance of Siri is made up of 4 HP c7k enclosures made up of 8 HP server blades each, with memory upgrades to 1TB of RAM. The company also says its text-to-speech can run on *"both general and* special purpose microprocessors, and any one or more processors of any kind of digital computer," indicating high sophistication and optimization.

> This information allegedly comes — albeit second-hand — from Apple's lead cloud architect, who says that every instance of Siri runs on 32 powerful HP servers with a total of 1024 cores and 32 terrabytes of RAM apiece. That certainly makes the new Mac Pro look long in the tooth.
>
> Specifically, each instance of Siri is made up of 4 HP c7k enclosures made up of 8 HP server blades each, with memory upgrades to 1TB of RAM.

See e.g., https://www.cultofmac.com/264381/hardware-siri-runs-puts-new-mac-pro-shame/.

57. Further, the Apple iPhone X in conjunction with Siri provides a computer operatively coupled to the internet.

[3] https://www.cultofmac.com/264381/hardware-siri-runs-puts-new-mac-pro-shame/.



See e.g., https://support.apple.com/en-us/HT204389.

58. The Apple Accused Products in conjunction with Siri also provide the computer further being operatively connected to at least one speaker-independent speech recognition engine and to at least one speech synthesis engine. For example, the Apple iPhone X in conjunction with Siri is a speaker-independent speech-recognition device, the speaker-independent speech-recognition device operatively connected to the computing device and configured to receive the speech commands. *See e.g.*, https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/; https://machinelearning.apple.com/2017/10/01/hey-siri.html.

59. The Apple iPhone X in conjunction with Siri provides a voice enabled device operatively connected to the computer and is configured to receive speech commands from users.

How Siri Works

Upon receiving your request, Siri records the frequencies and sound waves from your voice and translates them into a code. Siri then breaks down the code to identify particular patterns, phrases, and keywords. This data gets input into an algorithm that sifts through thousands of combinations of sentences to determine what the inputted phrase means. This algorithm is complex enough that it is capable of working around idioms, homophones and other literary expressions to determine the context of a sentence.

Once Siri determines its request, it begins to assess what tasks needs to be carried out, determining whether or not the information needed can be accessed from within the phone's data banks or from online servers. Siri is then able to craft complete and cohesive sentences relevant to the type of question or command requested.

See e.g., https://www.jameco.com/Jameco/workshop/howitworks/how-siri-works.html.

When you speak a request to Siri, your iPhone's software strips the request of any reference to the User ID and gives a random request ID. It's then encrypted and sent up to the cloud for more voice recognition to identify the words, and for natural language processing to understand the meaning of the words.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

AI ON THE DEVICE

Like its rivals, Apple carries out a lot of fancy processing and machine learning tasks on data the user speaks or types. The majority of it–especially tasks that involve very personal information–happens on the device, locked away from the view of Apple or anyone else but the user.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy; *see also* https://machinelearning.apple.com/2017/10/01/hey-siri.html.

60. The Apple Accused Products in conjunction with Siri provide a speech command to the speaker-independent speech recognition engine. Because the Apple iPhone X in conjunction with Siri can handle voice commands on the device itself or with help from the cloud, the Apple Accused Products in conjunction with Siri provide the speech command to the speaker-independent speech recognition engine. *See e.g.,* https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/.

AI ON THE DEVICE

Like its rivals, Apple carries out a lot of fancy processing and machine learning tasks on data the user speaks or types. The majority of it–especially tasks that involve very personal information–happens on the device, locked away from the view of Apple or anyone else but the user.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

61. The Apple Accused Products in conjunction with Siri have the computer accessing at least one of a plurality of web sites associated with the speech command to obtain information to be retrieved , the computer first accessing a first web site of the plurality of web sites and, if the information to be retrieved is not found at the first web site, the computer sequentially accessing the plurality of web sites until the information to be retrieved is found or until the plurality of web sites has been accessed. For example, the Apple iPhone X in conjunction with Siri includes a plurality of web site addresses, each web site address identifying a web site containing the information to be retrieved. These websites have previously been crawled by Applebot:

Rumors that Apple might be creating its own search engine started doing the rounds last fall, when webmasters started seeing web crawler visits from IP addresses starting with 17 – the IP address block owned entirely by Apple. Apple has now officially confirmed in a support document that it is operating its own web crawler called Applebot.

> *Applebot is the web crawler for Apple, used by products including Siri and Spotlight Suggestions. It respects customary robots.txt rules and robots meta tags. It originates in the 17.0.0.0 net block.*

See e.g., https://9to5mac.com/2015/05/06/apple-search-engine-applebot/.

About Applebot

Learn about Applebot, the web crawler for Apple.

Applebot is the web crawler for Apple. Products like Siri and Spotlight Suggestions use Applebot. It respects customary robots.txt rules and robots meta tags, and it originates in the 17.0.0.0 net block.

See e.g., https://support.apple.com/en-us/HT204683.

62. Further, the Apple iPhoneX in conjunction with Siri uses Google and Bing to assist with providing a plurality of web site addresses, each said web site address identifying a web site containing said information to be retrieved.

The big winner in Apple's recent switch to Google for search may be Siri. Last week Apple confirmed that its personal assistant will still use Microsoft's Bing for its image searches, but that Google will provide the web search, and YouTube will provide the video search. Apple will also use Google for searches in iOS, and in Spotlight in macOS.

See e.g., https://www.fastcompany.com/40475434/siri-may-be-the-big-winner-in-apples-switch-to-google-for-web-search.

> "Google is much better at extracting information from web content and presenting it to the user in a list format, which is created on a query by query basis," says Scott Zimmerman, technical SEO analyst at Walker Sands. "The quality of results, especially as it relates to long-tail queries that are typical for voice search, are significantly better on Google."

See e.g., https://www.fastcompany.com/40475434/siri-may-be-the-big-winner-in-apples-switch-to-google-for-web-search.

63. For example, because the Apple iPhone X in conjunction with Siri can handle voice commands on the device itself or with help from the cloud, the device itself may recognize a speech command.

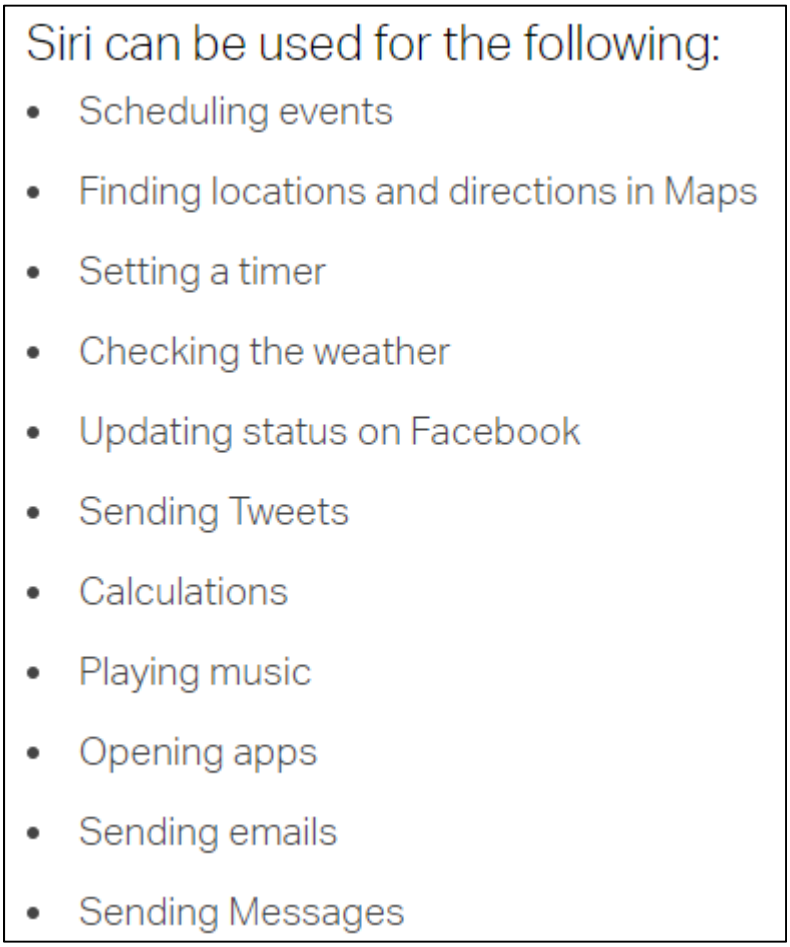
> **AI ON THE DEVICE**
>
> Like its rivals, Apple carries out a lot of fancy processing and machine learning tasks on data the user speaks or types. The majority of it–especially tasks that involve very personal information–happens on the device, locked away from the view of Apple or anyone else but the user.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

> When you speak a request to Siri, your iPhone's software strips the request of any reference to the User ID and gives a random request ID. It's then encrypted and sent up to the cloud for more voice recognition to identify the words, and for natural language processing to understand the meaning of the words.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

64. Further, the Apple iPhone X in conjunction with Siri is a system for retrieving information from web sites by uttering speech commands into a voice enabled device. Therefore, the speech commands comprise information requests selectable by the user. *See e.g.*, https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/.



See e.g., https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/.

65. Also, the Apple iPhone X in conjunction with Siri includes the speaker-independent speech-recognition device configured to receive the speech command from the users via the voice-enabled device and to select the corresponding recognition grammar upon receiving

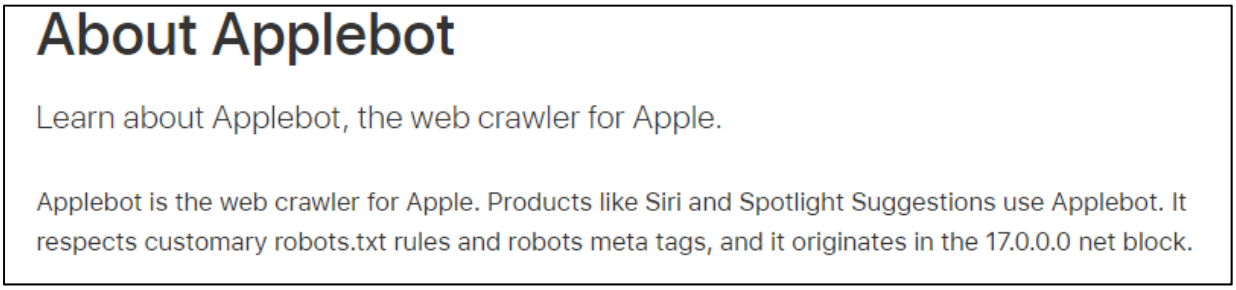
the speech command. *See e.g.,* https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/; https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

66. The Apple Accused Devices in conjunction with Siri includes the computer first accessing a first web site of the plurality of web sites and, if the information to be retrieved is not found at the first web site, the computer sequentially accessing the plurality of web sites until the information to be retrieved is found or until the plurality of web sites has been accessed. For example, the Apple iPhone X with built-in Siri is a system for retrieving information from pre-selected web sites by uttering speech commands into a voice enabled device. Apple references Siri on its website as the virtual assistant that recognizes voice commands and executes the requested functions. Siri uses various sources for obtaining information, either by delegating searches to search engines (Bing or Google) or using websites such as Yelp and others, or by accessing any one of several apps that it has on its device. *See e.g.,* https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/; https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

67. Further, the Apple iPhone X in conjunction with Siri use Applebot to crawl a plurality of web sites.

> Rumors that Apple might be creating its own search engine started doing the rounds last fall, when webmasters started seeing web crawler visits from IP addresses starting with 17 – the IP address block owned entirely by Apple. Apple has now officially confirmed in a support document that it is operating its own web crawler called Applebot.
>
> > *Applebot is the web crawler for Apple, used by products including Siri and Spotlight Suggestions. It respects customary robots.txt rules and robots meta tags. It originates in the 17.0.0.0 net block.*

See e.g., https://9to5mac.com/2015/05/06/apple-search-engine-applebot/.



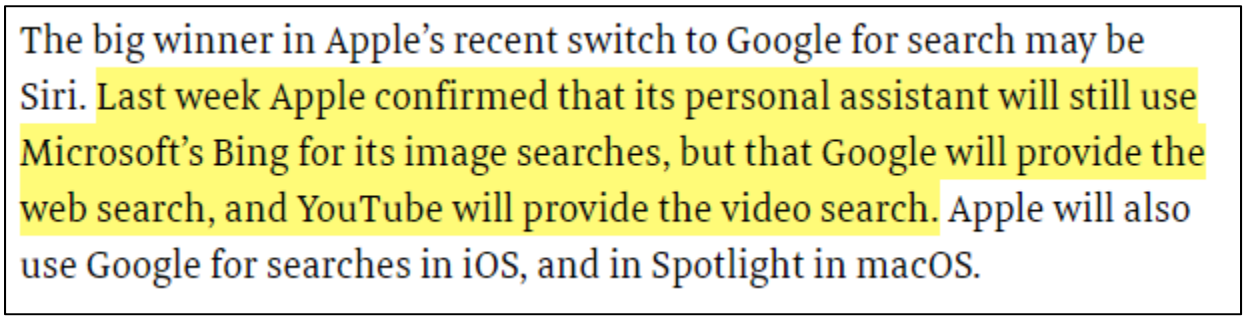
About Applebot

Learn about Applebot, the web crawler for Apple.

Applebot is the web crawler for Apple. Products like Siri and Spotlight Suggestions use Applebot. It respects customary robots.txt rules and robots meta tags, and it originates in the 17.0.0.0 net block.

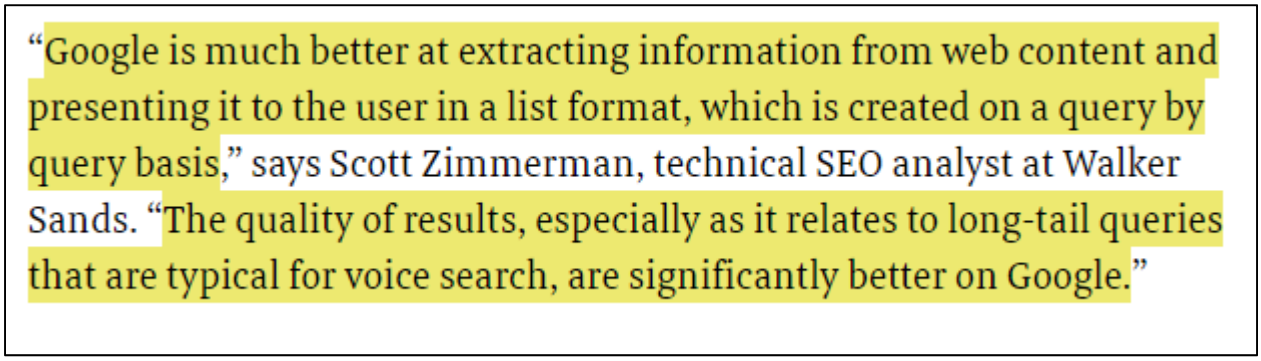
See e.g., https://support.apple.com/en-us/HT204683.

68. In addition to Applebot, the Apple iPhone X in conjunction with Siri use Google and Bing for search as well:



The big winner in Apple's recent switch to Google for search may be Siri. Last week Apple confirmed that its personal assistant will still use Microsoft's Bing for its image searches, but that Google will provide the web search, and YouTube will provide the video search. Apple will also use Google for searches in iOS, and in Spotlight in macOS.

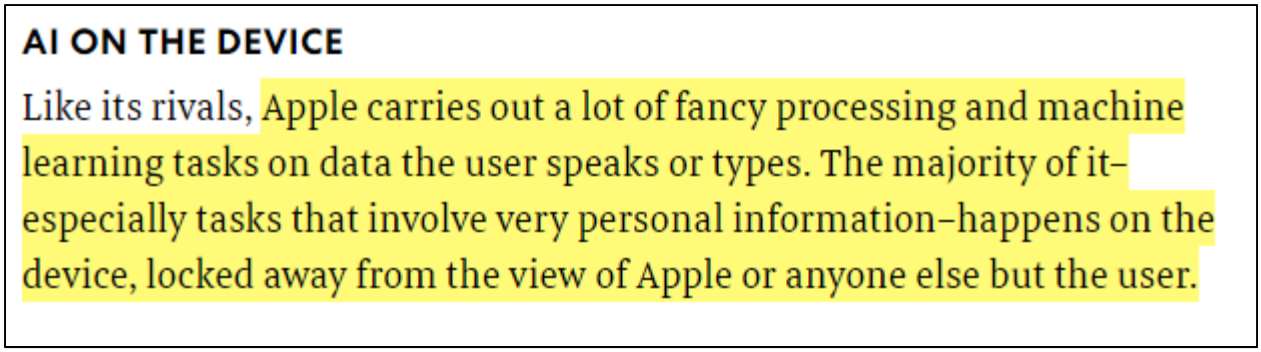
See e.g., https://www.fastcompany.com/40475434/siri-may-be-the-big-winner-in-apples-switch-to-google-for-web-search.



"Google is much better at extracting information from web content and presenting it to the user in a list format, which is created on a query by query basis," says Scott Zimmerman, technical SEO analyst at Walker Sands. "The quality of results, especially as it relates to long-tail queries that are typical for voice search, are significantly better on Google."

See e.g., https://www.fastcompany.com/40475434/siri-may-be-the-big-winner-in-apples-switch-to-google-for-web-search.

69. The Apple Accused Products in conjunction with Siri include the speech synthesis engine producing an audio message containing any retrieved information from the web sites and transmitting the audio message to the users via the voice enabled device. For example, the Apple iPhone X in conjunction with Siri includes the speech synthesis device configured to produce an audio message containing any retrieved information from the plurality of web sites, and the speech synthesis device further configured to transmit said audio message to said users via said voice enabled device. Because the Apple iPhone X in conjunction with Siri can receive and process voice commands on the device itself or in collaboration with the cloud, there is a recognition grammar corresponding to each instruction set and corresponding speech command. *See e.g.*, https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/.



AI ON THE DEVICE

Like its rivals, Apple carries out a lot of fancy processing and machine learning tasks on data the user speaks or types. The majority of it–especially tasks that involve very personal information–happens on the device, locked away from the view of Apple or anyone else but the user.

See e.g., https://www.fastcompany.com/40443055/apple-explains-how-its-making-siri-smart-without-endangering-user-privacy.

70. The Apple Accused Products in conjunction with Siri include the speech synthesis device further configured to transmit the audio message to the users via the voice-enabled device. For example, the Apple iPhone X in conjunction with Siri transmits the audio message to the user via the voice enabled device. *See e.g.*, https://www.macworld.co.uk/how-to/iosapps/use-siri-iphone-ipad-3495151/.

71. Defendant Apple has had knowledge of the '402 Patent since at least the filing of the complaint.

72. Defendant Apple has also infringed, and continues to infringe, claims of the '705 Patent by offering to commercially distribute, commercially distributing, selling, making and/or importing the Apple Accused Products, which are used in practicing the process, or using the systems, of the '705 Patent, and constitute a material part of the invention.

PRAYER FOR RELIEF

WHEREFORE, Parus request the Court grant the relief set forth below:

A. Enter judgment that Defendant has directly infringed, and continues to directly infringe, one or more claims of the '705 Patent and/or the '402 Patent;

B. Order Defendant to account for and pay damages caused to Parus by Defendant's unlawful acts of patent infringement;

C. Award Parus the interest and costs incurred in this action; and

D. Grant Parus such other and further relief, including equitable relief, as the Court deems just and proper.

DEMAND FOR JURY TRIAL

Plaintiff demands a jury trial for all issues deemed to be triable by a jury.

Dated: September 17, 2021

Respectfully submitted,

By */s/ Michael N. McNamara w/permission Andrea L. Fair*

Michael N. McNamara – Lead Counsel
Massachusetts BBO No. 665885
MMcNamara@mintz.com
Michael T. Renaud
Massachusetts BBO No. 629783
MTRenaud@mintz.com

Sean M. Casey *(PHV motion forthcoming)*
Massachusetts BBO No. 705197
SMCasey@mintz.com
MINTZ LEVIN COHN FERRIS GLOVSKY AND POPEO PC
One Financial Center
Boston, MA 02111
Tel: 617-542-6000
Fax: 617-542-2241
www.mintz.com

Of Counsel:

T. John Ward, Jr.
Texas State Bar No. 00794818
E-mail: jw@wsfirm.com
Andrea L. Fair
Texas State Bar No. 24078488
E-mail: andrea@wsfirm.com
Claire Abernathy Henry
Texas State Bar No. 24053063
Email: claire@wsfirm.com
Charles Everingham IV
Texas State Bar No. 00787447
Email: ce@wsfirm.com
WARD, SMITH & HILL, PLLC
1507 Bill Owens Parkway
Longview, Texas 75604
(903) 757-6400 (telephone)
(903) 757-2323 (facsimile)

Attorneys for Plaintiff *Parus Holdings Inc.*